# WEST

Generate Collection | Print

**Search Results -** Record(s) 1 through 27 of 27 returned.

---

☐ 1. Document ID: US 20030043414 A1

L2: Entry 1 of 27 File: PGPB Mar 6, 2003

DOCUMENT-IDENTIFIER: US 20030043414 A1
TITLE: Method of generating medium resolution proofs from high resolution image data

Summary of Invention Paragraph (28):
[0026] In general, in one aspect, the invention features a method for determining an optimal sample dimension suitable for descreening and resealing the raster data of a halftone image, which was converted from an original contone image using a periodic screen. The method comprises obtaining parameters of the periodic screen, including a line density, a cell dimension, and a screen angle; and modifying the cell dimension depending upon the line density and the screen angle of the periodic screen thereby calculating the optimal sample dimension suitable for descreening of the halftone image. The method of the invention may also include storing the optimal sample dimension. Further, the method of the invention may include descreening and resealing raster data using the calculated optimal sample dimension.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

---

☑ 2. Document ID: US 6509903 B1

L2: Entry 2 of 27 File: USPT Jan 21, 2003

DOCUMENT-IDENTIFIER: US 6509903 B1
TITLE: System and method for recording an image

CLAIMS:

7. The method of claim 6 wherein said screening parameters include at least one of the following group: halftone dot rotation angle and screen resolution.

18. The method of claim 17 wherein said screening parameters include one of the following: halftone dot rotation angle and screen resolution.

22. The method of claim 21 wherein said screening parameters include one of the following: halftone dot rotation angle and screen resolution.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

---

☑ 3. Document ID: US 6133927 A

L2: Entry 3 of 27 File: USPT Oct 17, 2000

DOCUMENT-IDENTIFIER: US 6133927 A
TITLE: Image forming apparatus

Detailed Description Text (24):
The following Table 1 shows pitches of moire fringe patterns in a case where the pitch of the halftone screen and the screen angle are changed while the screen angle of the protruding portion is fixedly 0.degree. and the interval between protruding portions is set to 0.17 mm (150 lines/inch) and 0.13 mm (200 lines/inch). It can be understood from the table that the pitch of moire fringe pattern can be changed by controlling the protruding structure on the surface of the intermediate transfer body and the halftone screen structure.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

---

4. Document ID: US 5981122 A

L2: Entry 4 of 27 File: USPT Nov 9, 1999

DOCUMENT-IDENTIFIER: US 5981122 A
TITLE: Image recording method

Detailed Description Text (33):
FIG. 17 shows an arrangement in which dimple patterns are provided on both the photosensitive member side and the charge retaining medium side. If the dimple patterns on the two members are disposed such that the convex portions of these dimple patterns face each other, and so do the concave portions, the effect of the difference between the convex and concave portions can be enhanced, so that it is possible to obtain the same effect that is obtained in the case where dimple patterns are provided only on either the photosensitive member or the charge retaining medium even if the height of these dimple patterns is smaller than in the case where dimple patterns are provided on only one side. If the dimple patterns on the two members are offset so that the convex portions of the dimple patterns on one side face the concave portions of the dimple patterns on the other side, it is possible to halve the spacing between the dimple patterns and make the dot pitch finer. In addition, if linear dimple patterns are formed on both the photosensitive member and the charge retaining medium and these two members are disposed face-to-face with each other with the angle therebetween being properly changed by appropriately rotating them relative to each other, it is possible to form halftone dots with the screen angle changed. Further, it is possible to form halftone dots by various combinations of dimple patterns, for example, a combination of concentric circle-shaped dimple patterns and radiating line-shaped dimple patterns. It is, as a matter of course, possible to provide dimple patterns on the photosensitive member electrode 2b and the insulating layer 1a in the arrangement shown in FIG. 17.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

---

☑ 5. Document ID: US 5745249 A

L2: Entry 5 of 27 File: USPT Apr 28, 1998

DOCUMENT-IDENTIFIER: US 5745249 A
TITLE: Pipelined architecture for patterned halftone generation

Brief Summary Text (6):
U.S. Pat. No. 4,149,194 and U.S. Pat. No. 4,185,304 to Holladay, issued Apr. 10, 1979 and Jan. 22, 1980, respectively, disclose a method for halftoning a digital image using a rotated angle screen. The basis for the technique was the use of a repeating block of screen values, wherein the angle of the screen and growth of the halftone dot was controlled by the shift applied to subsequent instances of the block.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☑ 6. Document ID: US 5715070 A

L2: Entry 6 of 27 File: USPT Feb 3, 1998

DOCUMENT-IDENTIFIER: US 5715070 A
TITLE: Freely configurable image processing apparatus

Detailed Description Text (100):
The processing sequence above is shown in FIG. 42. In this processing, an image is first inclined in the editorial section 11 by an angle .alpha. against the main scanning direction. Then dither processing is executed to the inclined image to give the image a certain screen angle .beta. against the auxiliary scanning direction. The image is again inclined by -.alpha. against the main scanning direction to return the image to the original state. As a result, the screen angle changes to .delta. against the auxiliary scanning direction. Namely, a different screen angle can be made by changing an angle for inclination. By changing a screen angle, a plurality of screen angles can advantageously be obtained with one threshold value matrix.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☑ 7. Document ID: US 5665497 A

L2: Entry 7 of 27 File: USPT Sep 9, 1997

DOCUMENT-IDENTIFIER: US 5665497 A
TITLE: Image recording method

Detailed Description Text (33):
FIG. 17 shows an arrangement in which dimple patterns are provided on both the photosensitive member side and the charge retaining medium side. If the dimple patterns on the two members are disposed such that the convex portions of these dimple patterns face each other, and so do the concave portions, the effect of the difference between the convex and concave portions can be enhanced, so that it is possible to obtain the same effect that is obtained in the case where dimple patterns are provided only on either the photosensitive member or the charge retaining medium even if the height of these dimple patterns is smaller than in the case where dimple patterns are provided on only one side. If the dimple patterns on the two members are offset so that the convex portions of the dimple patterns on one side face the concave portions of the dimple patterns on the other side, it is possible to halve the spacing between the dimple patterns and make the dot pitch finer. In addition, if linear dimple patterns are formed on both the photosensitive member and the charge retaining medium and these two members are disposed face-to-face with each other with the angle therebetween being properly changed by appropriately rotating them relative to each other, it is possible to form halftone

dots with the screen angle changed. Further, it is possible to form halftone dots by various combinations of dimple patterns, for example, a combination of concentric circle-shaped dimple patterns and radiating line-shaped dimple patterns. It is, as a matter of course, possible to provide dimple patterns on the photosensitive member electrode 2b and the insulating layer 1a in the arrangement shown in FIG. 17.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

---

☑ 8. Document ID: US 5530555 A

L2: Entry 8 of 27 File: USPT Jun 25, 1996

DOCUMENT-IDENTIFIER: US 5530555 A
TITLE: Method and apparatus for recording halftone dot image with different repeating units

Detailed Description Text (6):
On the other hand, hue to be enhanced may be varied with the original image components. In this case, it is necessary to change a screen angle (angle formed by a main scanning or subscanning line and the direction for repetition of the halftone dots) corresponding to each color separation for each original image component, in order to suppress appearance of interference fringes (moires) between a plurality of color separations which are related to the hue to be enhanced. FIG. 4 shows exemplary halftone dots, having the same shapes, which are recorded at three different screen angles .theta. with halftone dot area rates of 50% similarly to those shown in FIG. 3, at (a) to (c) respectively. It is assumed that 23 scanning lines form each of two edges of the minimum repeating unit of a halftone dot at a screen angle .theta. of 0.degree. as shown at (a) in FIG. 4, for example. When halftone dots of the same shapes and sizes are recorded at a different screen angle .theta. of 45.degree., on the other hand, 65 scanning lines form each of two edges of the minimum repeating unit of the halftone dots, as shown at (b) in FIG. 4. When halftone dots are recorded at a screen angle .theta. of 15.degree., further, 260 scanning lines form each of two edges of the minimum repeating unit of the halftone dots, as shown at (c) in FIG. 4. Namely, when halftone dots of the same shapes and the same sizes are thus recorded at different screen angles, the minimum repeating units of the halftone dots are generally different from each other. The halftone dot recording apparatus according to the present invention can record halftone dots in minimum repeating units which are varied with respective original image components, whereby it is possible to record the halftone dots at properly different screen angles in response to the respective original components.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

---

☐ 9. Document ID: US 5426519 A

L2: Entry 9 of 27 File: USPT Jun 20, 1995

DOCUMENT-IDENTIFIER: US 5426519 A
TITLE: Method and apparatus for implementing accurate angle screens

Detailed Description Text (15):
Subsequent to producing the resolution scaled color separations 36A-36D, the separations are halftoned by halftone processor 18. As illustrated in FIG. 5, these may be a plurality of periodic halftone processors (130, 132, 134, and 136), using a screen matrix stored in screen matrix memory 126, which, for a given gray level

reproduce a periodic dot pattern. While screening may be described for simplicity as the addition of a set of selected screen values to image signals within a defined area of the image along with a uniform application of a threshold level(s) to the combined values, it will be understood that the process of screening is commonly represented by a set of varying thresholds defined at locations corresponding to pixels over a given area of the image. A screen cell is generally smaller than the total image and will be replicated in a predetermined scheme for processing the image in order to cover an area of the image. A method for an efficient representation of variable or rotated angle screen cells by a screen matrix and a corresponding replication scheme, is given in U.S. Pat. No. 4,149,194 to Holladay, and is hereby incorporated by reference in the instant specification for its teachings.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments     KWIC | Draw Desc | Image

---

☐ 10. Document ID: US 5398118 A

L2: Entry 10 of 27     File: USPT     Mar 14, 1995

DOCUMENT-IDENTIFIER: US 5398118 A
TITLE: Automatical generation of a periodic pattern without occurrence of moire

Brief Summary Text (5):
In color printing, in order to prevent moire in overprinting of color decomposed images, halftone image recording is carried out by changing a screen angle (halftone angle) for every color decomposed images. In addition, the number of intensity or gray levels indicated by the halftone screen may be changed in accordance with recording density in the scanning image writing section. Two methods of changing the screen angle and the number of intensity levels have been proposed as follows.

Detailed Description Text (4):
In color printing, a color image on a manuscript is decomposed into three color decomposed images (RGB) where three colors are red (R), green (G), and blue (B). The three color decomposed images (RGB) are converted into another three color decomposed images (YMC) where three colors are yellow (Y), magenta (M), cyan (C). Four colors yellow (Y), magenta (M), cyan (C), and black (B.sub.L) are often used. In theory, only the three inks yellow, magenta, and cyan (YMC) should be needed. Mixing the three inks should produce an ink which absorbs all the light, yielding black (B.sub.L). But, in practice, the inks may not absorb completely or mix well, so a fourth black ink is used to set the shade. On overprinting the four color decomposed images (YMCB.sub.L), moire often occurs. To prevent occurrence of moire, halftone image recording is carried out by changing a screen angle (halftone angle) for every color decomposed images (YMCB.sub.L). In addition, the number of intensity or gray levels indicated by the halftone screen may be changed in accordance with recording density of the scanning image writing section 25. As described above, conventional two methods have been proposed in changing the screen angle and the number of the intensity levels for the halftone screen. However, the conventional two methods have defects as mentioned in the preamble of the instant specification.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments     KWIC | Draw Desc | Image

---

☐ 11. Document ID: US 5394252 A

L2: Entry 11 of 27     File: USPT     Feb 28, 1995

DOCUMENT-IDENTIFIER: US 5394252 A

TITLE: Hybrid quantization method for color document reproduction

Detailed Description Text (5):
FIG. 2 shows the halftone processor 18 operational characteristics. Four separations, C(x,y), M(x,y), Y(x,y), K(x,y), obtained, are each processed independently for halftoning purposes to reduce an m-bit input to an n-bit output, where x and y represent two dimensional position on a page. In accordance with the invention, cyan, magenta and yellow separations are processed with a screening method, preferably with rotated screens at periodic halftone processors 100, 102 and 104. These are periodic halftone processors, using a screen matrix stored in screen matrix memory 106, which, for a given gray level reproduce a periodic dot pattern. While screening may be described for simplicity as the addition of a set of selected screen values to image signals within a defined area of the image, in conjunction with a uniform application of a threshold level(s) to the combined values, it will be understood that the process of screening may also be represented by a set of varying thresholds defined at locations corresponding to pixels over a given area of the image. A screen cell, is generally smaller than the total image and will be replicated in a predetermined scheme for processing the image in order to cover an area of the image. A method for an efficient representation of variable or rotated angle screen cells by a screen matrix and a corresponding replication scheme, is given in U.S. Pat. No. 4,149,194 to Holladay. The output of a process using a screen cell is a set of pixels, defined by a set of levels having a number of members less than the input set of values. Commonly, the set of n-bit output values is binary, either black or white, or a spot or no spot, although the values might be gray. The binary output of a single halftone cell is a set of pixels that are either black or white, which together form a "dot". The periodic halftone processors 100, 102 and 104 return an n bit value representing the separation.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments    KWIC | Draw Desc | Image

---

☐ 12. Document ID: US 5293539 A
L2: Entry 12 of 27    File: USPT    Mar 8, 1994

DOCUMENT-IDENTIFIER: US 5293539 A
TITLE: Method and apparatus for calibrating tone reproduction in a proofing system

Detailed Description Text (22):
Through operator PC 120 and specifically through interactive menu based screen displays generated thereat, the DDCP system operator can edit the contents of each of the queues and each proof request therein. Because the image parameters that configure the marking engine for any proof image form part of the request for that proof, the operator can change, as desired, the condition(s) under which any individual proof will be generated, e.g. by changing screen angle for any individual halftone separation. In addition, the DDCP system operator can also re-prioritize the proof requests, re-arrange the order in which the proof images are successively generated, and even to add or delete proof requests from each queue.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments    KWIC | Draw Desc | Image

---

☐ 13. Document ID: US 5282306 A
L2: Entry 13 of 27    File: USPT    Feb 1, 1994

DOCUMENT-IDENTIFIER: US 5282306 A

TITLE: Process for the preparation of a draw-formed printed can

Brief Summary Text (28):
Still further, in accordance with the present invention, there is provided a process for the preparation of a draw-formed printed can having a print image at least on a side wall portion, which comprises draw-forming a preliminarily printed metal blank, wherein an image of a rectangular original to be printed is developed in an annular plane, at least a circumferential portion of the annular image is divided into a plurality of regions, a printing plate which is halftone-separated so that universal lines or longitudinal directions of long dots in the respective regions are oriented substantially to the center of the annular plane is formed, and the metal blank is printed by using the so-formed printing plate. In this process, the image of the rectangular original to be printed is developed in an annular plane by known means, and a halftone-separated printing plate is formed from this annular image. Preferably, the formation of this printing plate is performed by multiple light exposure where the screen angle is changed for each of the divided regions, and a universal line screen or a long dot screen is preferably used as the halftone-separating screen.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments    KWIC | Draw Desc | Image

---

14. Document ID: US 5255085 A

L2: Entry 14 of 27    File: USPT    Oct 19, 1993

DOCUMENT-IDENTIFIER: US 5255085 A
TITLE: Adaptive technique for providing accurate tone reproduction control in an imaging system

Detailed Description Text (27):
Through operator PC 120 and specifically through interactive menu based screen displays generated thereat, the DDCP system operator can edit the contents of each of the queues and each proof request therein. Because the image parameters that configure the marking engine for any proof image form part of the request for that proof, the operator can change, as desired, the condition(s) under which any individual proof will be generated, e.g. by changing screen angle for any individual halftone separation. In addition, the DDCP system operator can also re-prioritize the proof requests, re-arrange the order in which the proof images are successively generated, and even add or delete proof requests from each queue.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments    KWIC | Draw Desc | Image

---

15. Document ID: US 5107349 A

L2: Entry 15 of 27    File: USPT    Apr 21, 1992

DOCUMENT-IDENTIFIER: US 5107349 A
TITLE: Multiple screen frequency half-toning with one screen angle

Brief Summary Text (18):
A halftone electronic screening image processing apparatus according to a preferred embodiment of the present invention includes a plurality of at least two different types of threshold value halftone submatrices of j.times.k elements arranged in a supermatrix, wherein each of the elements is assigned different screen signal values

representative of gray levels. Means are provided for selecting a series of threshold values in sequential order from the supermatrix. The series of threshold values are compared with an electrical signal representative of the gray level of an image pixel for generating an output marking signal corresponding to one or the other of two levels in a binary graphic or display device. The halftone supermatrix is defined such that there is one more ON element in one of the submatrix types than in the other submatrix type when there are an odd number of elements turned ON so as to result in a predetermined apparent screen angle at a first screen frequency, and there is the same number of ON elements in all submatrices so as to result in a predetermined apparent screen angle at a second screen frequency different from the first screen frequency when there are an even number of elements turned ON. Thus, the electronic halftone threshold value supermatrix formed of the submatrices increases the number of available gray levels by printing the image at a higher screen frequency without increasing in false texture artifacts because the apparent screen angle does not change between density steps.

Detailed Description Text (3):
It has been found that by arranging the submatrices differently in a supermatrix, the advantage which IH processing has over other halftone image processing algorithms (including an increased number of gray levels) can be retained while avoiding the false texturing problem associated with changing screen angles between density steps.

Detailed Description Text (6):
Thus, the electronic halftone threshold value supermatrix formed of the submatrices arranged according to the present invention increases the number of available gray levels by printing the image at a higher screen frequency without increasing in false texture artifacts because the apparent screen angle does not change between density steps.

CLAIMS:

1. A halftone electronic screening image processing method comprising:

providing a plurality of two different types of threshold value halftone submatrices of j.times.k elements arranged in a supermatrix;

assigning different screen signal values representative of gray levels to each of said elements in the two types of submatrices;

creating a series of threshold values selected in sequential order from said supermatrix;

comparing the series of threshold values with an electrical signal representative of the gray level of an image pixel for generating an output marking signal corresponding to one or the other of two levels in a binary graphic or display device; and

defining said halftone supermatrix such that:

(a) when there are an odd number of elements turned ON in a supermatrix, there is one more ON element in one of said submatrix types than in the other submatrix type, and this results in a predetermined apparent screen angle at first screen frequency, and

(b) when there are an even number of elements turned ON in a supermatrix, there is the same number of ON elements in both submatrix types, and this results in said predetermined apparent screen angle at a second screen frequency different from said first screen frequency, whereby the electronic halftone threshold value supermatrix formed of the submatrices increases the number of available gray levels by printing the image at a higher screen frequency without increasing in false texture artifacts because the apparent screen angle does not change between gray levels.

8. A halftone electronic screening image processing apparatus comprising:

a plurality of two different types of threshold value halftone submatrices of j.times.k elements arranged in a supermatrix, wherein each of said elements in the two types of submatrices is assigned different screen signal values representative of gray levels;

means for selecting a series of threshold values in sequential order from said supermatrix;

means for comparing the series of threshold values with an electrical signal representative of the gray level of an image pixel for generating an output marking signal corresponding to one or the other of two levels in a binary graphic or display device; and

means for defining said halftone supermatrix such that:

(a) when there are an odd number of elements turned ON in a supermatrix, there is one more ON element in one of said submatrix types than in the other submatrix type, and this results in a predetermined apparent screen angle at a first screen frequency, and

(b) when there are an even number of elements turned ON in a supermatrix, there is the same number of ON elements in both submatrix types, and this results in said predetermined apparent screen angle at a second screen frequency different from said first screen frequency, whereby the electronic halftone threshold value supermatrix formed of the submatrices increases the number of available gray levels by printing the image at a higher screen frequency without increasing in false texture artifacts because the apparent screen angle does not change between gray levels.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

---

☐ 16. Document ID: US 5029107 A

L2: Entry 16 of 27 File: USPT Jul 2, 1991

DOCUMENT-IDENTIFIER: US 5029107 A
TITLE: Apparatus and accompanying method for converting a bit mapped monochromatic image to a grey scale image using table look up operations

Brief Summary Text (13):
In an effort to reduce the time required and expense associated with manual color reproduction processes, the art has turned away from use of these manual processes in high volume graphic art applications to the use of electronic page creation and composition systems, as noted above. These systems convert contone separations into electronic (often digital) form, electronically change screen angles and compensate dot size for expected dot gain, and electronically produce appropriate halftone separations thereby eliminating the need to photographically generate the separation transparencies and the proof. Such systems aim to produce accurate halftoned color separations at an increased throughput and at a lower cost than that heretofore possible with traditional manual color reproduction processes.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

---

☐ 17. Document ID: US 4987498 A

L2: Entry 17 of 27 File: USPT Jan 22, 1991

DOCUMENT-IDENTIFIER: US 4987498 A
TITLE: Method of forming halftone screen

CLAIMS:

1. A method of forming a halftone screen in converting a continuous-tone image into a halftone dot image based on halftone screen signals by defining a screen angle as a rotational tangent thereof to establish a basic periodic portion of the halftone screen signals and periodically generating the basic period portion to cover an entire scanned region of the continuous-tone image, said method comprising the steps of:

preparing minimum unit dot data items necessary to define said basic period portion as determined by a screen angle and a dot resolution level; and

generating said dot data items in a sequence of address signals X, Y which is established based on said screen angle and said dot resolution level to constitute said basic periodic portion;

wherein said dot data items represented by address signals X, Y are converted into dot data items represented by address signals x, y which are defined by:

x=MOD(X+F(Y),N.sub.x)

y=MOD(Y,N.sub.y)

where N.sub.x, N.sub.y are numbers of dot data items of said basic periodic portion in directions X, Y, respectively, F(Y) is an address offset number with respect to the address signal Y, and MOD is a modulo operator.



---

☐ 18. Document ID: US 4977458 A

L2: Entry 18 of 27 File: USPT Dec 11, 1990

DOCUMENT-IDENTIFIER: US 4977458 A
**** See image for Certificate of Correction ****
TITLE: Apparatus for addressing a font to suppress Moire patterns occurring thereby and a method for use therein

Brief Summary Text (20):
In an effort to reduce the time required and expense associated with manual photographic based color reproduction processes, the art has turned away from use of these manual processes in high volume graphic art applications to the use of electronic image processing systems. These systems convert contone images or separations into electronic (often digital) form, electronically change screen angles and compensate for expected dot gain, electronically produce appropriate halftone separations and in some instances halftoned color images directly onto a sheet of paper thereby eliminating the need to photographically generate both separation transparencies and a proof. Through use of electronic image processing, these systems aim to produce high quality halftoned color images at a substantially increased throughput than that possible with traditional manual processes. However, for various reasons as discussed below, these electronic systems when used in graphic arts production environments often fall short of this goal.

Brief Summary Text (30):

For example, U.S. Pat. Nos. 4,456,924 and 4,350,996 (respectively issued on Sept. 21, 1982 and June 26, 1984 to G. Rosenfeld) describe electronic screeners that utilize added noise to eliminate Moire. Specifically, these patents describe electronic screeners, generally similar to those discussed above, that use a screen pattern having a rectangular matrix of microcells which have been electronically rotated to a desired screen angle and are successively superimposed over corresponding groups of adjacent pixels of a color separation to generate a corresponding halftone separation. These two patents recognize that rounding error occurring in the calculation of the address of each microcell in the screen pattern, particularly at certain screen angles, will produce Moire. To break the Moire, these patents teach that a relatively small amount of noise in the form of a small random number should be added to either the address applied to a screen memory or to the output provided by the screen memory. Unfortunately, merely adding a small amount of noise in this fashion does not necessarily ensure that substantially all the screener induced Moire will be suppressed.

Detailed Description Text (17):
As the screen angle changes for an image area having a uniform tonal value, the screened halftone dots appearing in this area that are produced by the marking engine are not only rotated through the screen angle but also, the position of the center of a dot within any macro pixel changes between adjacent macro pixels. This is clearly shown in FIGS. 4A and 4B which show circular halftone dot patterns for a constant tonal area and the underlying micro pixel patterns that form these dots and are written by the marking engine for a screen angle of zero and 15 degrees. Specifically, for a zero screen angle as shown in FIG. 4A, all the halftone dots produced by the marking engine are substantially identical to printed halftone dot 405 and are each centered at the same location within its corresponding macro pixel, e.g. macro pixel 235.sub.j for halftone dot 405. For a 15 degree screen angle with respect to the horizontal axis, as shown in FIG. 4B, each reference halftone dot is shown as a circle with an "X" marking its center location and the actual printed micro pixel patterns for several of these dots being shown as blackened. The remaining reference halftone dots, such as dot 418, and portions thereof that overlay the macro pixels would also be printed; however, their corresponding micro pixel patterns have not been darkened to clearly show the individual micro pixels that would be used to form these dots and dot portions. As is clearly evident from the figure, the center location of each printed angled halftone dot within its corresponding macro pixel varies between adjacent macro pixels. Specifically, the micro pixel location of the center of printed halftone dot 413 within macro pixel 414 is not the same as the micro pixel location of the center of printed halftone dot 417 within macro pixel 416. This variation results from the angled orientation of the reference halftone dots that form any angled screen line with respect to the horizontal micro rasters produced by the marking engine. In addition, since the center of each angled reference halftone dot is not always centered over the center location of a corresponding micro pixel, a slightly different configuration of micro pixels will be circumscribed by a reference halftone dot from one halftone dot to the next. Consequently, the shape of each printed halftone dot changes slightly from dot to dot, e.g., such as between printed halftone dots 413 and 417, and 417 and 419.

Detailed Description Text (68):
As noted above, screen handler 950 keeps track of where to sample a reference cell by generating a succession of addresses at which a reference cell is to be sampled along a sampling line for each micro raster appearing in the printed image. The screen handler contains X POSITION and Y POSITION register circuits 952 and 960, six bit pseudo random noise generator 956 and eight bit address adders 954 and 958. X POSITION register circuit 952 and Y POSITION register circuit 960 respectively maintain the current values of parameters X POSITION and Y POSITION. These values are used as the incremented orthogonal coordinates for the next sampling point in the reference cell. Appropriate initial values are loaded into the parameter registers within screen handler 950 during initialization and can be dynamically changed, if desired, during a screening run by host computer 40 to alter the screen angle. Dynamically changing the screen angle is not recommended inasmuch as doing so may disadvantageously introduce artifacts into a resulting screened halftone image. Hence, for that reason and for simplification, the following discussion will assume that the screen angle remains fixed during any screening run.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 19. Document ID: US 4918622 A

L2: Entry 19 of 27 File: USPT Apr 17, 1990

DOCUMENT-IDENTIFIER: US 4918622 A
TITLE: Electronic graphic arts screener

Brief Summary Text (20):
In an effort to reduce the time required and expense associated with manual photographic based color reproduction processes, the art has turned away from use of these manual processes in high volume graphic art applications to the use of electronic image processing systems. These systems convert contone images or separations into electronic (often digital) form, electronically change screen angles and compensate for expected dot gain, electronically produce appropriate halftone separations and in some instances halftoned color images directly onto a sheet of paper thereby eliminating the need to photographically generate both separation transparencies and a proof. Through use of electronic image processing, these systems aim to produce high quality halftoned color images at a substantially increased throughput than that possible with traditional manual processes. However, for various reasons as discussed below, these electronic systems when used in graphic arts production environments often fall short of tis goal.

Detailed Description Text (17):
As the screen angle changes for an image area having a uniform tonal value, the screened halftone dots appearing in this area that are produced by the marking engine are not only rotated through the screen angle but also, the position of the center of a dot within any macro pixel changes between adjacent macro pixels. This is clearly shown in FIGS. 4A and 4B which show circular halftone dot patterns for a constant tonal area and the underlying micro pixel patterns that form these dots and are written by the marking engine for a screen angle of zero and 15 degrees. Specifically, for a zero screen angle as shown in FIG. 4A, all the halftone dots produced by the marking engine are subtantially identical to printed halftone dot 405 and are each centered at the same location within its corresponding macro pixel, e.g. macro pixel 235.sub.j for halftone dot 405. For a 15 degree screen angle with respect to the horizontal axis, as shown in FIG. 4B, each reference halftone dot is shown as a circle with an "X" marking its center location and the actual printed micro pixel patterns for several of these dots being shown as blackened. The remaining reference halftone dots, such as dot 418, and portions thereof that overlay the macro pixels would also be printed; however, their corresponding micro pixel patterns have not been darkened to clearly show the individual micro pixels that would be used to form these dots and dot portions. As is clearly evident from the figure, the center location of each printed angled halftone dot within its corresponding macro pixel varies between adjacent macro pixels. Specifically, the micro pixel location of the center of printed halftone dot 413 within macro pixel 414 is not the same as the micro pixel location of the center of printed halftone dot 417 within macro pixel 416. This variation results from the angled orientation of the reference halftone dots that form any angled screen line with respect to the horizontal micro rasters produced by the marking engine. In addition, since the center of each angled reference halftone dot is not always centered over the center location of a corresponding micro pixel, a slightly different configuration of micro pixels will be circumscribed by a reference halftone dot from one halftone dot to the next. Consequently, the shape of each printed halftone dot changes slightly from dot to dot, e.g., such as between printed halftone dots 413 and 417, and 417 and 419.

Detailed Description Text (70):
As noted above, screen handler 950 keeps track of where to sample a reference cell

by generating a succession of addresses at which a reference cell is to be sampled along a sampling line for each micro raster appearing in the printed image. The screen handler contains X POSITION and Y POSITION register circuits 952 and 960, six bit pseudo random noise generator 956 and eight bit address adders 954 and 958. X POSITION register circuit 952 and Y POSITION register circuit 960 respectively maintain the current values of parameters X POSITION and Y POSITION. These values are used as the incremented orthogonal coordinates for the next sampling point in the reference cell. Appropriate initial values are loaded into the parameter registers within screen handler 950 during initialization and can be dynamically changed, if desired, during a screening run by host computer 40 to alter the screen angle. Dynamically changing the screen angle is not recommended inasmuch as doing so may disadvantageously introduce artifacts into a resulting screened halftone image. Hence, for that reason and for simplification, the following discussion will assume that the screen angle remains fixed during any screening run.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

---

☑ 20. Document ID: US 4916545 A

L2: Entry 20 of 27 File: USPT Apr 10, 1990

DOCUMENT-IDENTIFIER: US 4916545 A
TITLE: Electronic graphic arts screener that suppresses Moire patterns using pseudo-random font selection

Brief Summary Text (20):
In an effort to reduce the time required and expense associated with manual photographic based color reproduction processes, the art has turned away from use of these manual processes in high volume graphic art applications to the use of electronic image processing systems. These systems convert contone images or separations into electronic (often digital) form, electronically change screen angles and compensate for expected dot gain, electronically produce appropriate halftone separations and in some instances halftoned color images directly onto a sheet of paper thereby eliminating the need to photographically generate both separation transparencies and a proof. Through use of electronic image processing, these systems aim to produce high quality halftoned color images at a substantially increased throughput than that possible with traditional manual processes. However, for various reasons as discussed below, these electronic systems when used in graphic arts production environments often fall short of this goal.

Brief Summary Text (30):
For example, U.S. Pat. Nos. 4,456,924 and 4,350,996 (respectively issued on September 21, 1982 and June 26, 1984 to G. Rosenfeld) describe electronic screeners that utilize added noise to eliminate Moire. Specifically, these patents describe electronic screeners, generally similar to those discussed above, that use a screen pattern having a rectangular matrix of microcells which have been electronically rotated to a desired screen angle and are successively superimposed over corresponding groups of adjacent pixels of a color separation to generate a corresponding halftone separation. These two patents recognize that rounding error occurring in the calculation of the address of each microcell in the screen pattern, particularly at certain screen angles, will produce Moire. To break the Moire, these patents teach that a relatively small amount of noise in the form of a small random number should be added to either the address applied to a screen memory or to the output provided by the screen memory. Unfortunately, merely adding a small amount of noise in this fashion does not necessarily ensure that substantially all the screener induced Moire will be suppressed.

Detailed Description Text (17):
As the screen angle changes for an image area having a uniform tonal value, the screened halftone dots appearing in this area that are produced by the marking

engine are not only rotated through the screen angle but also, the position of the center of a dot within any macro pixel changes between adjacent macro pixels. This is clearly shown in FIGS. 4A and 4B which show circular halftone dot patterns for a constant tonal area and the underlying micro pixel patterns that form these dots and are written by the marking engine for a screen angle of zero and 15 degrees. Specifically, for a zero screen angle as shown in FIG. 4A, all the halftone dots produced by the marking engine are substantially identical to printed halftone dot 405 and are each centered at the same location within its corresponding macro pixel, e.g. macro pixel 235.sub.j for halftone dot 405. For a 15 degree screen angle with respect to the horizontal axis, as shown in FIG. 4B, each reference halftone dot is shown as a circle with an "X" marking its center location and the actual printed micro pixel patterns for several of these dots being shown as blackened. The remaining reference halftone dots, such as dot 418, and portions thereof that overlay the macro pixels would also be printed; however, their corresponding micro pixel patterns have not been darkened to clearly show the individual micro pixels that would be used to form these dots and dot portions. As is clearly evident from the figure, the center location of each printed angled halftone dot within its corresponding macro pixel varies between adjacent macro pixels. Specifically, the micro pixel location of the center of printed halftone dot 143 within macro pixel 414 is not the same as the micro pixel location of the center of printed halftone dot 417 within macro pixel 416. This variation results from the angled orientation of the reference halftone dots that form any angled screen line with respect to the horizontal micro rasters porduced by the marking engine. In addition, since the center of each angled reference halftone dot is not always centered over the center location of a corresponding micro pixel, a slightly different configuration of micro pixels will be circumscribed by a reference halftone dot from one halftone dot to the next. Consequently, the shape of each printed halftone dot changes slightly from dot to dot, e.g., such as between printed halftone dots 413 and 417, and 417 and 419.

Detailed Description Text (75):
As noted above, screen handler 950 keeps track of where to sample a reference cell by generating a succession of addresses at which a reference cell is to be sampled along a sampling line for each micro raster appearing in the printed image. Since each font is completely stored within one corresponding memory plane as an array of eight bit threshold values that collectively defines each differently sized halftone dot that forms the font, each memory plane can be viewed as a reference cell. The screen handler contains X POSTION and Y POSITION register circuits 952 and 960 and four bit pseudo-random number generator 956. X POSITION register circuit 952 and Y POSITION register circuit 960 respectively maintain the current values of parameters X POSITION and Y POSITION. These values are used as the incremented orthogonal coordinates for the next sampling point in the reference cell. Appropriate initial values are located into the parameter registers within screen handler 950 during initialization and can be dynamically changed, if desired, during a screening run by host computer 40 to alter the screen angle. Dynamically changing the screen angle is not recommended inasmuch as doing so may disadvantageously introduce artifacts into a resulting screened halftone image. Hence, for that reason and for simplification, the following discussion will assume that the screen angle remains fixed during any screening run.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments    KWIC | Draw Desc | Image

---

☐ 21. Document ID: US 4752822 A

L2: Entry 21 of 27    File: USPT    Jun 21, 1988

DOCUMENT-IDENTIFIER: US 4752822 A
**** See image for Certificate of Correction ****
TITLE: Color halftone image processing apparatus producing various screen angles and having an adaptive color image data conversion look-up table and a small-capacity masking memory

Detailed Description Text (51):
FIG. 17-A shows a basic cell of the threshold matrix for changing the screen angles. FIG. 17-B shows a basic threshold matrix. Note that the basic cell signifies a unit pattern when the thresholds are repeatedly arranged. Regarding such basic threshold matrix, when 10.times.10 basic threshold matrices are repeatedly arranged, for example, the shape of the basic cell is not disturbed and the same threshold value occurs for each of the corresponding 10 vertical or horizontal values. The threshold matrix shown in FIG. 17-B consists of 10.times.10 threshold values. Since the basic cell consists of 20 threshold values, up to 20 gray levels can be obtained (i.e., 21 gray levels including white).

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments    KWIC | Draw Desc | Image

---

☐ 22. Document ID: US 4543613 A

L2: Entry 22 of 27 File: USPT Sep 24, 1985

DOCUMENT-IDENTIFIER: US 4543613 A
TITLE: Method for producing halftone dots in a halftone plate recording apparatus

Brief Summary Text (31):
In the above described method a halftone picture of any described screen angle can be output using the same screen pattern only by changing the screen angle .theta., and further, by varying value of p, a halftone dot of any given screen line number can be output. That is, as p is put smaller, times of adding operation necessary for X and Y addresses to attain to the fundamental period of the screen pattern are increased, so that even if the main scanning clock and the scanning pitch are fixed, a large halftone dot can be output.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments    KWIC | Draw Desc | Image

---

☐ 23. Document ID: US 4486788 A

L2: Entry 23 of 27 File: USPT Dec 4, 1984

DOCUMENT-IDENTIFIER: US 4486788 A
TITLE: Method for producing a halftone plate for use in a picture reproducing machine

Detailed Description Text (117):
On the other hand, the change of the screen angle, in particular, the change to the symmetrical basic halftone structure having the enantiomorphous relation such as a relation between the screen angles 15.degree. and -15.degree. is carried out in the following manner.

Detailed Description Text (122):
Such a symmetrical change of the screen angle or the basic halftone structure is very important when the color separation printing plates are prepared. For example, the screen angles of the printing plates for cyan and magenta can be selected to +15.degree. and -15.degree., respectively, and the obtained basic halftone structures having the screen angles +15.degree. and -15.degree. have an enantiomorphous relation each other.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments    KWIC | Draw Desc | Image

---

☑ 24. Document ID: US 4196451 A

L2: Entry 24 of 27    File: USPT    Apr 1, 1980

DOCUMENT-IDENTIFIER: US 4196451 A
TITLE: Electronic halftone generator

Brief Summary Text (14):
It is still a further object of the present invention to provide an electronic halftone generator which utilizes a screening function which is periodic in time with dual frequencies and phases, the screening function allowing the characteristics of the two-dimensional dot grid which comprises the halftone pattern to be varied and the screen angle thereof to be rotated, the latter to avoid Moire pattern problems inherent in using multiple screens.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments    KWIC | Draw Desc | Image

---

☐ 25. Document ID: US 4149183 A

L2: Entry 25 of 27    File: USPT    Apr 10, 1979

DOCUMENT-IDENTIFIER: US 4149183 A
TITLE: Electronic halftone generator

Brief Summary Text (14):
It is still a further object of the present invention to provide an electronic halftone generator which utilizes a screening function which is periodic in time with dual frequencies and phases, the screening function allowing the characteristics of the two-dimensional dot grid which comprises the halftone pattern to be varied and the screen angle thereof to be rotated, the latter to avoid Moire' pattern problems inherent in using multiple screens.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments    KWIC | Draw Desc | Image

---

☐ 26. Document ID: US 3911480 A

L2: Entry 26 of 27    File: USPT    Oct 7, 1975

DOCUMENT-IDENTIFIER: US 3911480 A
TITLE: Generating screened half-tones by scanning

Abstract Text (1):
This invention discloses a new and unique means of generating color separation screens simultaneously from a color original by scanning methods. The individual separation screens are each on a square matrix of substantially the same size as all others of the set, and each individual separation screen is rotated at the screen angle most popularly used in commercial color printing. Dot characters are deflected at an angle approximately 45.degree. from the angle of the desired screen pattern.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 27. Document ID: JP 09284553 A

L2: Entry 27 of 27 File: JPAB Oct 31, 1997

DOCUMENT-IDENTIFIER: JP 09284553 A
TITLE: MEDIUM TONE PROCESSING METHOD

Abstract Text (2):
SOLUTION: A mother matrix has a 4×4 size and sub matrices each has a 2×2 size and a round mark (○) is described at a position in each sub matrix denoting a maximum value. A direction of a screen angle is changed by changing the arrangement of numerals (weight) in each sub matrix. That is, a different screen angle is produced through different kinds of concentration of each input signal level (different density distribution state takes place). Furthermore, each sub matrix is turned clockwise by one segment to change screen angles into 1', 2', 3', (57°, -33°, 12°) for medium gradation matrix with respect to 1, 2, 3 for 1st gradation matrix.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

Generate Collection | Print

| Term | Documents |
| --- | --- |
| SCREEN.DWPI,TDBD,EPAB,JPAB,USPT,PGPB. | 671288 |
| SCREENS.DWPI,TDBD,EPAB,JPAB,USPT,PGPB. | 106740 |
| ANGLE.DWPI,TDBD,EPAB,JPAB,USPT,PGPB. | 1515854 |
| ANGLES.DWPI,TDBD,EPAB,JPAB,USPT,PGPB. | 503521 |
| HALFTON$3 | 0 |
| HALFTON.DWPI,TDBD,EPAB,JPAB,USPT,PGPB. | 12 |
| HALFTONAL.DWPI,TDBD,EPAB,JPAB,USPT,PGPB. | 2 |
| HALFTONE.DWPI,TDBD,EPAB,JPAB,USPT,PGPB. | 14420 |
| HALFTONED.DWPI,TDBD,EPAB,JPAB,USPT,PGPB. | 819 |
| HALFTONEED.DWPI,TDBD,EPAB,JPAB,USPT,PGPB. | 1 |
| HALFTONER.DWPI,TDBD,EPAB,JPAB,USPT,PGPB. | 93 |
| ((HALFTON$3 OR DITHER$3 OR MATRI$3) WITH ((SCREEN NEAR1 ANGLE) NEAR1 (MODIF$5 OR CHANG$5 OR ALTER$5 OR ROTAT$5))).USPT,PGPB,JPAB,EPAB,DWPI,TDBD. | 27 |

There are more results than shown above. Click here to view the entire set.

**Display Format:** - | Change Format

Previous Page Next Page